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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/389,841	09/03/1999	LARS G. SVENSSON	18036-12	5947

7590 07/12/2002
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EXAMINER

TRAN, HENRY N

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 07/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/389,841

Applicant(s)

SVENSSON ET AL.

Examiner

HENRY N. TRAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09/03/99 and the interview on 06/24/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-74 is/are pending in the application.
- 4a) Of the above claim(s) 36-53, 56, 57 and 62-74 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9, 11-17, 19-21, 23-27, 29-31, 35 and 58-61 is/are rejected.
- 7) ☒ Claim(s) 6, 10, 18, 22, 28 and 32-34 is/are objected to.
- 8) ☒ Claim(s) 1-74 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 6, 7.
- 4) ☒ Interview Summary (PTO-413) Paper No(s) 8.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

This Application has been examined. The original claims 1-74 are pending. The examination results are as following.

Election/Restrictions

1. During a telephone conversation with applicants' attorney, Mr. Marc E. Brown, Reg. No. 28590, on 24 June 2002, a provisional election was made without traverse to prosecute the invention of group I, claims 1-35, 54-55, and 58-61. Affirmation of this election must be made by applicant in replying to this Office action. Claims 36-53, 56-57, and 62-74 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Information Disclosure Statement

2. The examiner has considered the references listed in the information disclosure statement (IDS) filed 12/18/00 (Paper No. 7) (see attached form PTO-1449).
3. The examiner has considered the references listed in the information disclosure statement (IDS) filed 12/05/00 (Paper No. 6) (see attached form PTO-1449).
4. The examiner has noted that the information disclosure statement (IDS) filed 07/21/00 (Paper No. 5) has been recorded on the file wrapper. However, the IDS is missing from the application file. Said IDS and the document(s) and/ or the reference(s) listed therein (if any) are requested to be re-submitted for consideration.

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5. The examiner has considered the U.S. Patents listed in the United States Patent Documents Section of the form PTO-1449 attached with the information disclosure statement (IDS) filed 03/14/00 (Paper No. 4). However, the documents listed in the Other References Section of said above-identified form have not been considered because the examiner was unable to find a legible copy of each of said listed documents in the application file. Said listed documents must be re-submitted for consideration (see attached form PTO-1449).

Drawings

6. The examiner objects to the drawings filed 09/03/99 because of the problems found by the Draftsperson (see attached form PTO 948). The corrected drawings are required in reply to the Office action to avoid abandonment of the application. **The objection to the drawings will not be held in abeyance.**

7. The drawing of figure 2 is objected to because of a spelling error: the reference character for element 115 should be changed to -- Recovery Connection System -- instead of "Recovery Conection System". A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

8. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "other capacitances" (lines 6, 9, and 11 of claims 1 and 13; lines 6 of claims 25 and 58), and the "other capacitance-generating components" (lines 2, 9 and 10 of claim 44) must be shown or the features canceled from the claims. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

9. Claims 54 and 55 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants are required to cancel the claims, or amend the claims to place the claims in proper dependent form, or rewrite the claims in independent form.

Claims 54 and 55 are dependent upon the non-elected base claim 44. Applicants are required to cancel or amend said claims in replying to this Office action

For the purpose of this Office action, the examiner assumes that claims 54 and 55 are rewritten in independent forms including all of the limitations of the base claim 44.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 54 and 55 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claimed limitation “other capacitance-generating components” (lines 2, 9 and 10 of claims 54 and 55) was not described in the specification. The examiner is unable to determine

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the metes and bounds of the above underlined claimed limitation with a fair degree of certainty, so that the scope of the claimed invention sought to be patent can be determined.

The examiner was unable to apply prior art in the rejection of claims 54 and 55 until the rejection of claims 54 and 55 under 35 USC 112 (1 or 2) overcome.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1-5, 7-9, 11-17, 19-21, 23-27, 29-31, 35, and 58-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orita et al (U.S. Patent 6,028,573, hereinafter referred to as "Orita") in view of Schlecht et al (U.S. Patent 5,396,527, hereinafter referred to as "Schlecht").

14. Regarding claims 1, 13, 25, and 58, Orita teaches a process and a circuit for reducing the energy consumed by a display having a plurality of electrodes of display elements (604-612), which are capacitive elements (capacitive loads), each capacitive element having the ability to be selectively charged by the delivery of current (an image signal) through a line (SA1, or SA2, or SA3), the line also driving other capacitances in the display (driving load capacity and stray capacity), the circuit comprising: a voltage connection system including A, SA, and K (anode electrodes, sub anode electrodes SA, and cathode electrodes K) connected to the line (SA1, or SA2, or SA3) for controllably causing the line to connect to a voltage source 113 (Display Signal Generating Block 113); a recovery connection system 60, 62 and 600 (a group of switching

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circuit 60, a terminal 621, and an energy recovery circuit 600) connected to the lines for controllably causing the line to connected to a reservoir 600 (the energy recovery circuit 600) (see FIGS. 18; and col. 1, lines 33-39, col. 12, lines 24-25; line 48 to col. 13, line 52); and a control system 615 (a Pulse-Gating Signal Generating Circuit 615) for causing the voltage connection system to connect the line to the voltage source 613 for charging the capacitive elements and for causing the recovery connection system to connect the line to the reservoir 600 during the energy recovering period for discharging the capacitive elements (see col. 3, lines 51-56). Orita further teaches: (i) the process can be achieved by simultaneously charging and discharging the electrodes of the display elements (the capacitive elements), which is read on the claimed limitations adiabatic charging and adiabatic discharging; (ii) the use of a first and second voltage regulators 1105 and 1106 (FETs 1105 and 1106) for applying the stored voltage (the image signal) (see FIG. 38; and col. 18, lines 20-52); and (iii) the circuit can be used also for driving a liquid crystal display (see col. 13, lines 62-67). However, Orita does not teach: the “other capacitances”, recovering energy from the portion of the other capacitances without at the same time recovering energy stored in the first one of the capacitive elements, or the first time period and the second time period. Schlecht teaches a recovered energy circuit for driving a computer display, wherein the load capacitor C262 and the parasitic capacitances C261 (which are read on the claimed limitation: the “other capacitances”) (see FIG. 26; col. 1, lines 17-19; and col. 20, lines 7-23) are charged and discharged during respective first half cycle and second half cycle; and the recovering energy from the parasitic capacitances is at the half cycle when the load capacitor is not active (see col. 2, lines 43-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Schlecht in

the device of Orita because this would provide a recovered energy circuit, which is capable of effectively recovering the energy stored in the parasitic capacitances, so that the power dissipated during the driving process is minimized, and is efficiently re-used later (see Schlecht; abstract; col. 2, lines 7-9; and col. 5, lines 51-58).

15. Regarding claims 2-5, 7-9, 11-12, 14-17, 19-21, 23-24, 26-27, 29-31, 35 and 59-61, Orita further also teaches: the process is repeated for each of the capacitive elements (see FIG. 18), the electronic switch 601 (a switching circuit 601) (see col. 13, line 37), the electroluminescent display, the liquid crystal display (see col. 13, line 67), the switching circuit using MOSFETs (see col. 3, lines 11-50). Schlecht teaches the use of: a ramp signal (see FIG. 5E), a half-wave sine pulse (see FIG. 5A). Claims 2-5, 7-9, 11-12, 14-17, 19-21, 23-24, 26-27, 29-31, 35 and 59-61 are dependent upon base claims 1, 13, 25, and 58, and are rejected on the same reasons set forth in claims 1, 13, 25 and 58, and by the reasons noted above.

Allowable Subject Matter

16. Claims 6, 10, 18, 22, 28, 32-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure (see form PTO-892).

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18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENRY N. TRAN whose telephone number is (703) 308-8410. The examiner can normally be reached on Mon - Fri from 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD A. HJERPE, can be reached at (703) 305-4709.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

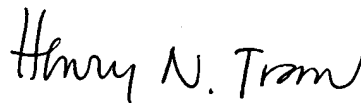
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office Whose telephone number is (703) 306-0377.



HENRY N. TRAN

Examiner
Art Unit 2674

hnt
July 10, 2002